

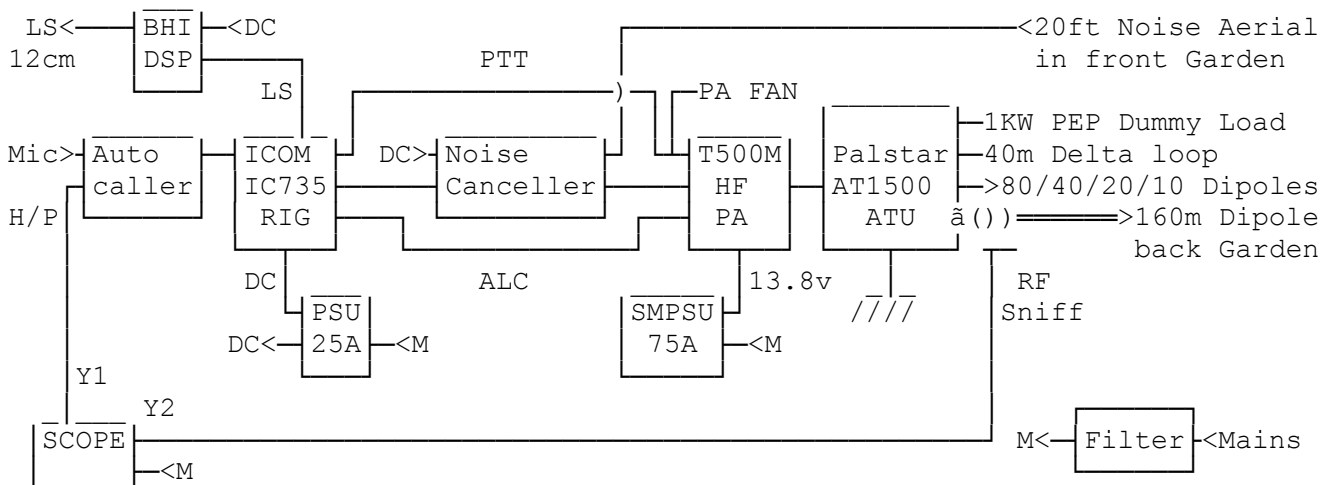
My Home HF Set-up

By G8MNY

(Updated May 21)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

After several years of HF improvements, I have ended up with this....



FEATURES

PSU Homemade Linear type, with 3A trip for low current leads, & a mains filter. SMPSU converted DEL Server PSU, with thick PA DC leads, & Ferrite rings. BHI DSP LS gives 10-20dB of noise reduction (ignores noise), used with large LS. Noise Canceller JPS ANC-4 with aerial, gives >15dB of QRM nulling on 1 source. IC735 sometimes used with its effective tuneable Noise Blanker or Attenuator. Auto caller Home-made CQ repeating & off air record & playback. IC735 used with it's very effective AF processor (10dB clipper) & standard Mic. T500M PA draws 75A @ 13.8V, so use SMPSU or float a car batts with thick leads. My T500A ALC ensures the Amp can't be over driven even on 11V DC or a bad SWR. Palstar AT1500CV ATU, cross needed power, handles high SWRs & can be balanced. Dummy load with PEP meter gives accurate PEP power measurments (scope option). Scope for monitoring Tx envelope & Rx AF Noise (timebase locked to mains). Mains filter adaptors, both include earth chokes.

ON AIR

I often get comments on how good the AF is (especially under noisy band conditions), it is just a well set up standard AF clipper (compressor) about 10dB (3x) on the IC735 with it's topky AF, do not clip bassy AF! The Tx filter bandwidth is 2.4kHz (300Hz-2.7kHz), but it does not suit all ears & in strong signal QSOs, I then turn compressor off. And I always use close up mic, to reduced background noise & room echo, & keep the ALC drive level correct.

The PA helps a lot, & when I go back to QRP stations M6s etc, & run their QRP, they often can't hear me, or would not have called me with a weak QRP signal.

I have had very complementary reports on how clean (narrow) the QRO signal is. E.g. "-35dB down on adjacent ch" & "You are much stronger than me at remote WEB SDR Rx site & also narrower!" So the old IC735 rig with its comms quality audio fixed narrow Tx IF, & the older 1977 Commercial PA with high levels of NFB, & my PA's ALC circuit, keep the Tx signal all very clean.

My Autocaller CQ, keeps the channel busy, while I catch up with paper log, or get the perfect SWR etc. & then I get called. But its CQ calls are bit noisy especially into the rigs clipper (10dB S/N lost). Overall it does make for lazy operating with less scanning. I do use 2nd VFO for that & go back to my CQ VFO.

The 3 noise systems I use,

1/ JPS ANC-4 Noise Canceller (null steerer), 2/ rig's tuneable Noise Blanker, & 3/ BHI DSP noise ignoring LS. These all complement each other very well, as they work differently. Sometimes all 3 are needed to get a usable band here, in RF noisy Croydon. With the JPS ANC-4, do not Rx too much Tx power on the noise aerial, as it can be damaged with nearby QRO! Using seperated aerials as I do, stops this, & also helps get deep nulls while leaving Rx signals, with same location aerials you tend to null out all signals at once!

The Scope timebase is locked to mains, & both beams are added to give just 1 line. Rx AF can help adjust the Noise Canceller & rig Noise Blanker threshold, as you can see the offending neighbours SMPSUs, & null out one pair of 100Hz noises, but not if 2 or more appear on another mains phases. Not mains locked QRM from TV/PC screens, polling data, PLTs systems, can be seen, & other non ham things like over the horizon radar "Wood Pecker" or "QRO 50Hz FM sweep jammers" are easily identified too.

The Tx envelope display shows up the peak with or without compression, all nicely rounded peaks under ALC power control, with no hard clipped wideband splattering flat tops!

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"Autocaller with old Maplin kit"
"High AMP Crowbar Protected PSU"
"DEL 7000815 SMPSU 12V 75A Mods"
"T500M 12V 500W HF Linear"
"Variable Speed Thermal Fan"
"BHI Noise Eliminating DSP LS"
"IC 735 No RF Output Fault"
"Palstar AT1500CV ATU"
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"Mains Plugtop Filter Adapter"
"Oscilloscopes"
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73 de John G8MNY @ GB7CIP
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